



## Material Safety Data Sheet

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### BCF (Halon 1211) - February 2002

#### Section 1 - Name & Hazard Summary

**Material name:** BCF (Halon 1211)

**Manufacturer:** ICI Americas Inc., Wilmington, Delaware 19897 Phone (302) 575-3000 (24 Hours)

**Hazard summary** (as defined by OSHA Hazard Communication Standard, 29 CFR 1910.1200):

**Physical hazards:** Compressed gas

**Health hazards:** Harmful (central nervous system depression, cardiac arrhythmias)

Read the entire MSDS for a more thorough evaluation of the hazards.

#### Section 2 - Ingredients

Bromochlorodifluoromethane (CAS 353-59-3) 100% TLV (ACGIH) Not listed

Ingredients not precisely identified are proprietary or non hazardous. All ingredients appear on the EPA TSCA Inventory. Values are not product specifications. gt = greater than, lt = less than, ca = approximately

#### Section 3 - Physical Data

**Boiling point:** 26°F

**Vapor pressure:** 15 psig at 15.6°C

**Vapor density (air = 1):** 5.7

**Solubility in water:** Insoluble

**pH:** No data

**Specific gravity:** 1.83 (liquid)

**% Volatile by volume:** 100

**Appearance and odor:** Colorless gas or colorless volatile liquid with very faint sweet odor

#### Section 4 - Fire and Explosion Hazard Data

**Flash point (and method):** DOES NOT FLASH

**Auto ignition temperature:** NONE

**Flammable limits (STP):** None

**Extinguishing media:** Not applicable; product is an extinguishing agent. Use water to cool fire-exposed cylinders or other containers.

**Special fire fighting protective equipment:** Self-contained breathing apparatus with full face piece and protective clothing when re-entering unventilated fire areas where product has been used.

**Unusual fire and explosion hazards:** When BCF is discharged onto a fire, it decomposes above 900°F, releasing bromide ions, the extinguishing agent. However, halogen compounds, such as halogen acids, are also formed. These byproducts, although harmful if inhaled, are easily detected; only a few parts per million create an unpleasant, acrid odor, which serves as a warning to the user. After the extinguisher is discharged, the area should be vacated until ventilation clears the atmosphere.

## Section 5 - Reactivity Data

**Stability:** Stable under normal conditions. Decomposes under fire conditions (above 900°F).

**Incompatibility (materials to avoid):** Active metals such as powdered aluminum and magnesium, and fires of metal hydrides.

**Hazardous decomposition products:** Thermal decomposition: BCF begins decomposing at temperatures above 900°F to give free halogens, halogen acids, and small amounts of carbonyl halides. Tests simulating fire conditions could not detect phosgene in amounts as low as 0.04 ppm.

**Hazardous polymerization:** Will not occur.

## Section 6 - Health Hazard Assessment

**General:** The health hazard assessment is based on a combination of available toxicity information and human experience.

**Ingestion:** Ingestion is not likely to occur since this material is a gas at room temperature.

**Eye contact:** The liquid form of this material can produce chilling sensations and discomfort.

**Skin contact:** Evaporation of liquid from the skin can produce chilling sensations. Skin injury does not result.

**Skin absorption:** Systematically toxic concentrations are unlikely to be absorbed through the skin in man.

**Inhalation:** Exposures to concentrations of this material above 4% for longer than one minute can cause toxic side effects.

**Other effects of overexposure:** Prolonged exposures can cause dizziness, headache, nausea, impaired coordination progressing to unconsciousness. In susceptible individuals, cardiac sensitization to circulating epinephrine compounds can result in potentially fatal heart arrhythmias.

### First aid procedures:

**Skin:** Wash material off the skin with copious amounts of soap and water. If redness, itching or a burning sensation develops, get medical attention.

**Eyes:** Immediately flush with copious amounts of water for at least 15 minutes. If redness, itching or a burning sensation develops, have eyes examined and treated by medical personnel.

**Ingestion:** Give 1 or 2 glasses of warm water to drink and get medical attention. DO NOT induce vomiting. Have victim lie down and keep warm. (Never give anything by mouth to an unconscious person.)

**Inhalation:** Remove victim to fresh air. If cough or other respiratory symptoms develop, consult medical personnel. If not breathing, give artificial respiration, preferably mouth-to-mouth. If breathing is difficult, give oxygen. Consult medical personnel.

**Note to Physician:** Product can induce cardiac muscle sensitization to circulating epinephrine-like compounds. DO NOT give adrenaline or similar sympathomimetic drugs. DO NOT allow a victim to exercise until 24 hours following specific exposures. Freeze burns of mucus tissue can develop following contact with liquid form of this material.

## Section 7 - Spill or Leak Procedures

**Steps to be taken in case material is released or spilled:** Ventilate spill area and recover any liquid. Protect against frostbite from evaporating liquid.

**Disposal method:** Not applicable

**Container disposal:** Not applicable

## Section 8 - Special Protection Information

**TLV or suggested control value:** No TLV assigned by ACGIH. ICIA operates its facilities such that employee exposure to this material is kept below 1000 ppm as an 8-hour TWA.

**Ventilation:** Ventilate low-lying areas, such as, sumps or pits where dense vapors may collect. Use local exhaust to control exposures.

**Respiratory protection (specify type):** Not normally needed if controls are adequate. If needed, use MSHA/NIOSH approved respirator for organic vapors. For high concentrations and oxygen-deficient atmospheres. Use positive pressure air-supplied respirator.

**Protective clothing:** Impervious gloves and apron to protect against liquid exposure.

**Eye protection:** Chemical tight goggles; full face shield in addition if splashing is possible.

**Other protective equipment:** Eyewash station and safety shower in work area when working with liquefied product.

## Section 9 - Special Precautions or Other Comments

**Precautions to be taken in handling or storing:** Store in a cool area with good ventilation. Keep vapors away from high temperature surfaces to avoid toxic and corrosive decomposition products. Enforce "NO SMOKING" rules in areas of use.